A-32: Isolation and partial characterization of acid proteinases from porcine ovaries

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Of the various functions of the acid proteinases, cathepsin D-like enzyme has been suggested to be acting on the regulation of insulin-like growth factor binding protein-3 activity. Insulin-like growth factor binding proteins maintain the availability of insulin-like growth factor which regulates ovarian follicle selection and development. The aim of the present study was isolation and characterization of acid proteinases in porcine ovaries.

Two extracts of porcine ovaries, namely ovarian follicular fluid (OFF) and ovarian tissue fluid (OTF) were studied. Significant acid proteinase activity was found in both OFF (0.57U/mg) and OTF (0.75U/mg). Reaction rate was linear upto 45 min. for both extracts. Optimum pH and temperature for acid proteinase activity in OFF and OTF were 2.5-3.5 and 50°C and 2.5-4.0 and 45°C respectively. Acid proteinase in OFF and OTF were stable upto 1 h at incubation pH 7 at 50°C and a gradual decrease was observed above 50°C. A sharp increase of activity was observed at 40°C and complete loss of activity at 70°C. Further, proteinases in OFF and OTF were stable for 1 h at pH 3.5 and 8.5 at 37°C.